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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,770	09/20/2006	Frank Locker	5003073.071US1	2986
29737 7590 01/22/2009 SMITH MOORE LEATHERWOOD LLP P.O. BOX 21927 GREENSBORO, NC 27420				
EXAMINER DOLLINGER, MICHAEL M				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
01/22/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/565,770

Applicant(s)

LOEKER ET AL.

Examiner

MICHAEL DOLLINGER

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 7, 12-17, 21, 22 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-11, 18-20, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB08)
- Paper No(s)/Mail Date 04/25/2006
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date: ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-11, 18-20, 23 and 24, drawn to a powdery water absorbing polymer.

Group II, claim(s) 12-17, drawn to a process for producing a powdery water absorbing polymer.

Group III, claim(s) 21 and 22, drawn to a transport process comprising flowing a powdery water absorbing polymer.

Group IV, claim(s) 25, drawn to a method of altering a flow value or a dust portion of a powdery water absorbing polymer.

2. The inventions listed as Groups I - IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature cannot be a special technical feature because it is shown in the prior art. The only common technical feature of all the claims is a powdery water-absorbing polymer. Sun et al (US 6,124,391) disclose superabsorbent polymer particles [abstract]. Since the common technical feature of the claims is disclosed in the prior art, the claims lack unity of invention.

3. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

(A) organic fine particles

(B) inorganic fine particles

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

4. The claims are deemed to correspond to the species listed above in the following manner:

(A) Claim 7

(B) Claim 8

The following claim(s) are generic: Claims 1-6 and 9-25.

5. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or

corresponding special technical features for the following reasons: the addition of organic powders and inorganic powders are disclosed in the prior art. Mukaida et al (US 5,672,419) disclose the addition of both organic powders and inorganic powders [8:11-15] to water absorbing polymer particles [abstract].

6. During a telephone conversation with Philip Mccann on 24 September 2008 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-11, 18-20, 23 and 24 Species (B), claim 8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7, 12-17, 21, 22 and 25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-6, 8-11, 18-20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukaida et al (EP 0 612 533 A1 or US 5,672,419) in view of Sun et al (US 6,124,391). All references to Mukaida et al refer to EP 0 612 533 A1.

10. Mukaida et al disclose a water absorbent composition comprising (A) 100 parts by weight of water absorbing polymer particles [abstract], (B) 0.5 to 30 part of a resin of a resin powder having heat adhesion property [abstract], and 10 weight % or less of an organic or inorganic powder [6:44-49]. The size of the water absorbing polymer particles (A) is 0.1mm to 0.9mm [3:53-55] and the polymer may be a crosslinked or self-crosslinked polyacrylic acid salt [3:34]. The water absorbing polymer whose surface is further cross linked by crosslinkers (secondary crosslinking) may be used [3:44-46]. The resin powder (B) may be a polyester type resin as well as other condensation type polymers [4:3-7]. Mukaida et al also disclose the above composition adhered to a fibrous material [abstract] such as cellulose-type fibers and organic synthetic type fibers [4:48-49] which reads on a composite comprising a powder water absorbing polymer. The water absorbing material is useful for water absorptive goods such as disposable diapers and sanitary napkins [abstract] which read on a chemical product.

11. Mukaida et al do not disclose the particle size of the organic or inorganic powders added to the composition. Mukaida et al do disclose preferable inorganic powders as zeolite, silica, alumina, bentonite and activated carbon, etc. [6:45-46].

12. Sun et al disclose a mixture of superabsorbent polymer (SAP) particles and inorganic powder [4:47-48]. The SAP particles are polymerized from acrylic acid or methacrylic acid salts [5:3-10]. The fine inorganic powder may comprise any of the

claims including hydrated aluminum silicates [7:10-12]. The average size of the particles of the inorganic powder is preferably less than about 5 μm [7:17-18]. Sun et al teach that the admixture of these inorganic fine particles provides anti-caking characteristics to the SAP particles [1:7-11].

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have prepared a powdery water absorbing polymer from a fine particle with a particle size of less than 200 μm , an adhesive thermoplastic and a water absorbing polymer particle because Mukaida et al teach that it is within the skill of the art to prepare a powdery water absorbing polymer from a fine particle, an adhesive thermoplastic and a water absorbing polymer particle and Sun et al teach that it is within the skill of the art to admix an SAP particle with a inorganic fine particle with an average particle size of 5 μm or less. One would have been motivated to use the inorganic fine particle of Sun et al in the composition of Mukaida et al to receive the expected benefit of anti-caking characteristics. Absent any evidence to the contrary, there would have been a reasonable expectation of success in using an inorganic fine powder with an average particle size of less than 200 μm as the inorganic powder of Mukaida et al.

14. Regarding claim 10, Mukaida et al also do not disclose particular crosslinking agents suitable for the surface crosslinking reaction.

15. Sun et al, discussed above, disclose SAP particles with the same polymer composition as Mukaida et al and also disclose suitable surface crosslinking agents including organic compounds such as a diol, a diamine, a diepoxide or an alkylene carbonate [6:21-25].

16. Selection of a known material based on its suitability for its intended use is *prima facie* obvious, see *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used an organic compound as a surface crosslinking agent with a polyacrylic acid water absorbing polymer particle composition because Mukaida et al teach that it is within the skill of the art to surface crosslink a polyacrylic acid water absorbing polymer particle with a crosslinking agents and Sun et al teach that it is within the ordinary skill of the art to utilize a diol, a diamine, a diepoxide or an alkylene carbonate as a surface crosslinking agent for SAP particles prepared from a polyacrylic acid. Absent any evidence to the contrary, there would have been a reasonable expectation of success in utilizing an organic surface crosslinking agent for the water absorbing polymer particles for Mukaida et al.

17. Regarding the limitations toward inherent properties in claims 1-4 and 11, all the compositional and structural limitations of the powdery water absorbing polymer and each of its components are disclosed in Mukaida et al in view of Sun et al. Henceforth, all the claimed inherent properties of the materials must be present in the disclosed compositions and components. These properties are held to be inherently disclosed by Mukaida et al in view of Sun et al.

18. Claims 1-5, 8-11, 18, 19, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ball (WO 91/18042 A1) in view of Sun et al (US 6,124,391).

19. Ball discloses a water absorbent resin particle comprising a carboxyl containing water absorbent resin rendered adhesive by the incorporation of a thermoplastic polymer with a hydrophilic character, and optionally a flow control additive [abstract]. The water absorbent resin is preferably an alkali metal acrylate type polymer [7:31-32] with a particle size preferably 0.5 mm or greater [17:30-32]. The adhesive thermoplastic polymer is preferably used in 20 parts by weight or less and more preferably 10 parts by weight or less per 100 parts by weight of water absorbent resin [13:9-17]. The adhesive thermoplastic polymer is preferably polyethylene oxide based material [11:19-22]. The flow control additive may be an inorganic material including silica powders and the like [12:2-3] and is included in an amount 0.25 to 1 part by weight per 100 parts by weight of water absorbent resin [14:1-11]. The flow control additive functions to maintain the flowability of the composition [11:29-31]. The water absorbing resin may be crosslinked on the surface by a polyhydroxy compound [8:25-30] including organic polyhydroxy compounds such as ethylene glycol [8:32]. Ball also discloses articles comprises the composition bound to a mass of woven or nonwoven fibers [abstract] which reads on a composite and a chemical product.
20. Ball does not disclose the particle size of the inorganic powders added to the composition as a flow control additive. Ball does teach, however that inorganic material includes silica powders and the like [12:2-3] and functions to maintain the flowability of the composition [11:29-31].
21. Sun et al disclose a mixture of superabsorbent polymer (SAP) particles and inorganic powder [4:47-48]. The SAP particles are polymerized from acrylic acid or

methacrylic acid salts [5:3-10]. The fine inorganic powder may comprise any of the clays including hydrated aluminum silicates [7:10-12]. The average size of the particles of the inorganic powder is preferably less than about 5 μm [7:17-18]. Sun et al teach that the admixture of these inorganic fine particles provides anti-caking characteristics to the SAP particles [1:7-11]. Anti-caking characteristics read on maintaining flowability.

22. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have prepared a powdery water absorbing polymer from a fine particle with a particle size of less than 200 μm , an adhesive thermoplastic and a water absorbing polymer particle because Ball teaches that it is within the skill of the art to prepare a powdery water absorbing polymer from a fine inorganic powder, an adhesive thermoplastic and a water absorbing polymer particle and Sun et al teach that it is within the skill of the art to admix an SAP particle with a inorganic fine particle with an average particle size of 5 μm or less. One would have been motivated to use the inorganic fine particle of Sun et al in the composition of Ball to receive the expected benefit of anti-caking characteristics. Absent any evidence to the contrary, there would have been a reasonable expectation of success in using an inorganic fine powder with an average particle size of less than 200 μm as the flow control additive of Ball.

23. Regarding the limitations toward inherent properties in claims 1-4 and 11, all the compositional and structural limitations of the powdery water absorbing polymer and each of its components are disclosed in Ball in view of Sun et al. Henceforth, all the claimed inherent properties of the materials must be present in the disclosed

compositions and components. These properties are held to be inherently disclosed by Ball in view of Sun et al.

24. Claims 1-6, 8, 11, 18-20, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisfeld et al (DE 100 26 861 A1) in view of Sun et al (US 6,124,391). All references to Eisfeld et al refer to the attached machine translation.

25. Eisfeld et al disclose a superabsorber group comprising at least one superabsorber particle and at least one thermoplastic adhesive connected with the superabsorber particle [page 1 paragraph 1]. The superabsorbers are preferably polyacrylates [page 2 paragraph 11] and have a particle size of approximately 30 to 500µm [page 2 paragraph 14]. The adhesive is present in an amount from 1 to 15, preferably 5 to 10 weight % of the superabsorber group [page 5 paragraph 4]. The adhesive includes at least 10 weight % of polymers selected from a group of polymers including polyester as well as other condensation polymers [page 3 paragraph 6]. Eisfeld et al also disclose medical articles or hygienic articles formed from the superabsorber group and prepared using a fiber matrix group [page 1 paragraph 1] which reads on a composite as well as a chemical product.

26. Eisfeld et al do not disclose the claimed 0.01 to about 20 percent by weight of a fine particle with a particle size of less than about 200µm.

27. Sun et al disclose a mixture of superabsorbent polymer (SAP) particles and inorganic powder [4:47-48]. The SAP particles are polymerized from acrylic acid or methacrylic acid salts [5:3-10]. The fine inorganic powder may comprise any of the

clays including hydrated aluminum silicates [7:10-12]. The average size of the particles of the inorganic powder is preferably less than about 5 μm [7:17-18]. The amount of the fine inorganic particle is typically between 0.2% and about 10% by weight of the SAP particles [7:25-32]. Sun et al teach that the admixture of these inorganic fine particles provides anti-caking characteristics to the SAP particles [1:7-11].

28. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have prepared a powdery water absorbing polymer from a fine particle with a particle size of less than 200 μm , an adhesive thermoplastic and a water absorbing polymer particle because Eisfeld et al teaches that it is within the skill of the art to prepare a powdery water absorbing polymer from a fine inorganic powder, an adhesive thermoplastic and a water absorbing polymer particle and Sun et al teach that it is within the skill of the art to admix an SAP particle with a inorganic fine particle with an average particle size of 5 μm or less. One would have been motivated to use the inorganic fine particle of Sun et al in the composition of Eisfeld et al to receive the expected benefit of anti-caking characteristics. Absent any evidence to the contrary, there would have been a reasonable expectation of success in using an inorganic fine powder with an average particle size of less than 200 μm as the flow control additive of Eisfeld et al.

29. Regarding the limitations toward inherent properties in claims 1-4 and 11, all the compositional and structural limitations of the powdery water absorbing polymer and each of its components are disclosed in Eisfeld et al in view of Sun et al. Henceforth, all the claimed inherent properties of the materials must be present in the disclosed

compositions and components. These properties are held to be inherently disclosed by Eisfeld et al in view of Sun et al.

Priority

30. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 25 July 2003. It is noted, however, that applicant has not filed a certified copy of the DE 103 34 286.9 application as required by 35 U.S.C. 119(b).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on Monday - Thursday 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

MICHAEL DOLLINGER
Examiner
Art Unit 1796

/mmd/